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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/602,840	06/24/2003	David J. Nelson	86051WRZ	9307

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Milton S. Sales
Patent Legal Staff
Eastman Kodak Company
343 State Street
Rochester, NY 14650-2201

EXAMINER

LIANG, LEONARD S

ART UNIT	PAPER NUMBER
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2853

DATE MAILED: 01/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/602,840	NELSON ET AL.	
	Examiner	Art Unit	
	Leonard S. Liang	2853	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 November 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) 2,3,7-9,19,20,22,23,25,29,30 and 33 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4-6,10-18,21,24,26-28,31,32 and 34-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 November 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Claims 1, 4-6, 10-18, 21, 24, 26-28, and 31-32 have been elected. Claims 34-38 have been added. These claims will herein be prosecuted. Claims 2-3, 7-9, 19-20, 22-23, 25, 29-30, and 33 are withdrawn from consideration.

Specification and Drawings

The amendments to the drawings and specification have been received and will now be approved.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 4-6, 10-18, 21, 24, 26-28, 31-32, and 34-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jagannathan et al (US Pat 6471327).

Jagannathan et al discloses:

- {claim 1} A method of printing (figure 1A, 1F); providing a receiver (figure 1A, 1F, reference 14); controllably depositing a marking material on the receiver by delivering a mixture of a compressed fluid solvent and the marking material toward the receiver, the mixture being contained under a first condition prior to

delivery toward the receiver, the marking material becoming free of the compressed fluid solvent prior to reaching the receiver (figure 1A, reference 12-13; figure 1F, reference 12a, 13; column 3, lines 25-37); controllably depositing the marking material on the receiver by delivering the mixture of the compressed fluid solvent and the marking material toward the receiver, the mixture being contained under a second condition prior to delivery toward the receiver, the marking material becoming free of the compressed fluid solvent prior to reaching the receiver (figure 1A, reference 12-13 (when printing is executed at least twice); figure 1F, reference 12a, 13; column 3, lines 25-37; column 7, lines 19-34; valve 15 and pressure control mechanism 17 are equipped to control pressure)

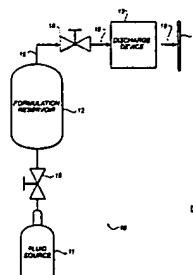
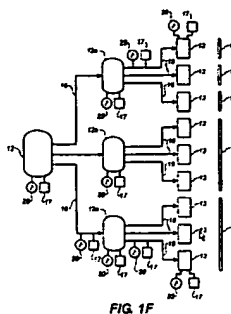


FIG. 1A

- {claims 4 and 24} wherein the first condition includes maintaining the mixture of the compressed fluid solvent and the marking material under a first pressure and the second condition includes maintaining the mixture of the compressed fluid solvent and the marking material under a second pressure (figure 1A, reference 12-13; figure 1F, reference 12a, 13; column 3, lines 25-37; column 4, lines 21-29;

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column 5, lines 29-50; column 7, lines 19-34; valve 15 and pressure control mechanism 17 control pressure of first and second condition)



- {claim 5} wherein controllably depositing the marking material of the mixture contained under the first condition includes delivering the mixture from the first pressure to a solvent evaporating pressure (figure 1A, 1F; column 3, lines 25-37; column 4, lines 21-29; column 5, lines 29-50; column 7, lines 19-34)
- {claim 6} wherein controllably depositing the marking material of the mixture contained under the second condition includes delivering the mixture from the second pressure to a solvent evaporating pressure (figure 1A, 1F; column 3, lines 25-37; column 4, lines 21-29; column 5, lines 29-50; column 7, lines 19-34)
- {claims 10 and 26} wherein controllably depositing the marking material associated with the first condition comprises controllably depositing the marking material associated with the first condition prior to controllably depositing the marking material associated with the second condition (figure 1A; depending on data to be printed, valve 15 can deposit marking material in accordance to the first condition prior to depositing in accordance to the second condition)

- {claims 11 and 27} wherein controllably depositing the marking material associated with the first condition occurs simultaneously with controllably depositing the marking material associated with the second condition (figure 1F)
- {claim 12} wherein controllably depositing the marking material associated with the first condition comprises controllably depositing the marking material associated with the first condition in a first location on the receiver and controllably depositing the marking material associated with the second condition comprises controllably depositing the marking material associated with the second condition in a second location on the receiver, the first location being distinct from the second location
- {claim 13} wherein controllably depositing the marking material associated with the first condition comprises controllably depositing the marking material associated with the first condition in a first location on the receiver and controllably depositing the marking material associated with the second condition comprises controllably depositing the marking material associated with the second condition in a second location on the receiver, the second location at least partially overlapping the first location (figure 1A, reference 13; when printing at least two times)
- {claim 15} wherein the first condition includes maintaining the mixture of the compressed fluid solvent and a first concentration of the marking material and the second condition includes maintaining the mixture of the compressed fluid

solvent and a second concentration of the marking material (figure 1A, reference 12)

- {claim 17} A method of printing (figure 1A, 1F); providing a receiver (figure 1A, 1F, reference 14); controllably depositing a first marking material on the receiver by delivering a mixture of a compressed fluid solvent and the first marking material toward the receiver, the mixture being contained under a first condition prior to delivery toward the receiver, the first marking material becoming free of the compressed fluid solvent prior to reaching the receiver; controllably depositing the first marking material on the receiver by delivering the mixture of the compressed fluid solvent and the first marking material toward the receiver, the mixture being contained under a second condition prior to delivery toward the receiver, the mixture being contained under a second condition prior to delivery toward the receiver, the first marking material becoming free of the compressed fluid solvent prior to reaching the receiver; depositing a second marking material (figure 1A, reference 12-13 (when printing occurs twice); figure 1F, reference 12a, 13; column 3, lines 25-37; column 7, lines 19-34)
- {claim 18} controllably depositing the second marking material on the receiver by delivering a mixture of a compressed fluid solvent and a second marking material toward the receiver, the mixture being contained under a first condition prior to delivery toward the receiver, the second marking material becoming free of the compressed fluid solvent prior to reaching the receiver; and controllably

depositing the second marking material on the receiver by delivering the mixture of the compressed fluid solvent and the second marking material toward the receiver, the mixture being contained under a second condition prior to delivery toward the receiver, the second marking material becoming free of the compressed fluid solvent prior to reaching the receiver (figure 1A, 1F; column 3, lines 25-37; column 4, lines 21-29; column 5, lines 29-50; column 7, lines 19-34)

- {claim 28} A printing apparatus; a source of a mixture of a compressed fluid solvent and a marking material; a discharge device positioned in fluid communication with the source of the mixture of the compressed fluid and the marking material; and a condition controlling device positioned in fluid communication between the source and the discharge device, the conditioning controlling device being operable to vary a process parameter associated with delivery of the mixture of the compressed fluid and the marking material (figure 1A, 1F; column 3, lines 25-37; column 4, lines 21-29; column 5, lines 29-60; column 7, lines 19-34)
- {claim 31} wherein the condition controlling device is a pressure controlling device (figure 1F, reference 17)
- {claim 32} wherein the pressure controlling device is a pressure reduction valve (column 5, lines 29-50)
- {claim 34} A method of printing (figure 1A, 1F) comprising: providing a receiver (figure 1A, 1F, reference 14); controllably depositing a marking material on the receiver by delivering a mixture of a compressed fluid solvent and the

marking material toward the receiver, the mixture being contained under a first condition prior to delivery toward the receiver, the marking material becoming free of the compressed fluid solvent prior to reaching the receiver (figure 1A, reference 12-13; figure 1F, reference 12a, 13; column 3, lines 25-37); varying the first condition to achieve a second condition using a condition controlling device (figure 1A, reference 15; figure 1F, reference 17; valve 15 and pressure control mechanism 17 are equipped to control pressure; temperature controlling device 20 could also be considered a condition controlling device); controllably depositing the marking material on the receiver by delivering the mixture of the compressed fluid solvent and the marking material toward the receiver, the mixture being contained under the second condition, the marking material becoming free of the compressed fluid solvent prior to reaching the receiver (figure 1A, reference 12-13 (when printing is executed at least twice); figure 1F, reference 12a, 13; column 3, lines 25-37; column 7, lines 19-34; valve 15 and pressure control mechanism 17 are equipped to control pressure)

- {claim 35} wherein varying the first condition to the second condition using the condition controlling device occurs prior to controllably depositing the marking material on the receiver by delivering the mixture of the compressed fluid solvent and the marking material toward the receiver, the mixture being contained under the second condition (figure 1E, reference 17, 20; condition controlling device can be equipped to vary the first condition to the second condition prior to controllably depositing the marking material on the receiver)

- {claim 36} wherein varying the first condition to the second condition using the condition controlling device occurs during controllably depositing the marking material on the receiver by delivering the mixture of the compressed fluid solvent and the marking material toward the receiver, the mixture being contained under the second condition (figure 1E, reference 17, 20; condition controlling device can be equipped to vary the first condition to the second condition during controllably depositing the marking material on the receiver)
- {claim 37} wherein using the condition controlling device includes using a pressure controlling device (figure 1E, reference 17)
- {claim 38} wherein using the condition controlling device includes using a temperature controlling device (figure 1E, reference 20)

Jagannathan et al differs from the claimed invention in that it does not explicitly disclose:

- {claims 1, 17-18, and 34} the second condition being distinct from the first condition
- {claims 14 and 21} wherein controllably depositing the marking material associated with the first condition and controllably depositing the marking material associated with the second condition comprises controllably depositing the marking material associated with the first condition and the second condition such that the combined deposited marking material has an increased color spectrum relative to the marking material associated with the first condition
- {claim 16} wherein the first condition includes maintaining the mixture of the compressed fluid solvent and the marking material at a predetermined pressure,

temperature, and marking material concentration and the second condition includes altering at least one of the predetermined pressure, temperature, and marking material concentration

Jagannathan discloses:

- {claims 1, 14, 16, 17, 18, 21, and 34} pressure control mechanisms (column 5, lines 29-50)

Though Jagannathan does not disclose that altering pressure between a first and second condition must occur, it is naturally suggested in the disclosed pressure control mechanisms that altering pressure between a first and second condition can occur, thus rendering the second condition distinct from the first condition. Under such a scenario, it is naturally suggested that the combined deposited marking material of the first condition and the second condition has an increased color spectrum relative to the marking material associated with the first condition. It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the teachings of Jagannathan to allow for different pressure control between the first and second conditions. The motivation for the skilled artisan in doing so is to gain the benefit of quicker, more accurate, and more precise printing.

Response to Arguments

Applicant's arguments filed 11/09/05 have been fully considered but they are not persuasive.

With respect to claims 1 and 17, the applicants argue, "Independent Claims 1 and 17 include the feature of depositing one marking material under distinct first and second conditions

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during a given material deposition application in order to create, for example, an article having multiple colors and/or multiple color shades." First, the examiner would like to note that claims 1 and 17 have not disclosure of creating multiple colors and shades. The examiner believes that the applicant is improperly narrowing the scope of the claimed invention by trying to introduce this concept of color into the independent claims. The examiner reminds the applicant that it is the claimed invention that is examined. Further, the examiner would like to note that the disclosure of creating an article having multiple colors and/or multiple color shades is a statement of intended use. That means that Jagannathan et al does not have to explicitly disclose this function. It only needs to be able to accomplish it. As seen in the above rejection, Jagannathan et al discloses both pressure and temperature control mechanisms which can affect the concentration, volume, and temperature of functional material. As is known in the art, these parameters will naturally influence the color shade of the functional material. Therefore, the examiner's disclosure that the creation of multiple color shades being naturally suggested was not a statement of hindsight reasoning, but rather a statement of natural consequence to intended use.

This also accounts for applicant's argument with respect to independent claim 28 as well as the new claims.

There is one thing that the examiner would like to note about new claims 35-36 however. The applicant claims that support for these features can be found on at least page 7, lines 17-22. However, page 7, lines 17-22 disclose condition controlling devices 310 that can be adjusted during operation, but do not go into detail about whether varying the first condition to the second condition occurred prior to or during controllably depositing the marking material. The examiner took this to mean that either scenario was possible given the presence of the controlling

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device 310. This is the same case as in Jagannathan et al. Though Jagannathan et al. does not explicitly disclose varying the first condition to the second condition either prior to or during controllably depositing the marking material. However, Jagannathan does disclose condition controlling mechanisms which can be equipped to handle the situation either way.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonard S. Liang whose telephone number is (571) 272-2148. The examiner can normally be reached on 8:30-5 Monday-Friday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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MANISH S. SHAH
PRIMARY EXAMINER